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PATENT APPLICATION
RESPONSE UNDER 37 CFR § 1.111

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Rejda et al Date: August 19, 2004
Serial No: 09/980,741 Docket No.: STL 9825.00
Filed: August 15, 2001 Examiner: McDonald, Rodney
For: ION MILL SHUTTER SYSTEM Art Unit: 1753

PRELIMINARY AMENDMENT UNDER 37 CFR 1.111

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Preliminary to examination please amend the above-identified application as follows:

Amendments

1-7. (Cancelled)

8. (Amended) An apparatus for use in a wafer process comprising:
~~a carrier;~~
~~an elongated element held by the carrier; and~~
~~a mask including a first shutter, a second shutter, and an~~
~~actuator for moving the first shutter and second shutter, wherein said~~
~~mask is used to selectively cover a first portion of the elongated~~
~~element as the wafer process continues to act on a second portion of the~~

~~elongated element, the wafer process substantially halting with respect to the first portion of the elongated element~~

a controller, wherein said controller is structured to monitor at least one property level of the element, further wherein the controller is structured to independently actuate each of the first and second shutter based on the property level.

9. (Original) The apparatus of claim 8 wherein the mask is a dynamic mask.

10. (Amended) The apparatus of claim 9 ~~wherein further comprising a controller for the actuator, the controller actuating each of the first shutter and the second shutter between an open position where the shutter is not covering a portion of the elongated element and a covering position, where the shutter is covering a portion of the elongated element.~~

11. (Cancelled)

12. (Amended) The apparatus of claim 9 wherein the ~~elongated~~ element is a row of a plurality of magneto resistive elements sliced from a wafer.

13. (Amended) The apparatus of claim 12 wherein at least one property level includes two of the magneto resistive elements of the row of a plurality of magneto resistive elements are monitored for electrical resistance, the apparatus further wherein comprising a controller for the actuator, the controller actuating each of the first shutter and the second shutter between an open position where the at least one of the first and second shutter is not covering a portion of the elongated element, and a covering position where the at least one of the first and second shutter is covering a portion of the elongated element, in response to the electrical resistance associated with that portion of the elongated element being at a predefined value.

14. (Original) The apparatus of claim 13 wherein the first shutter has a width larger than the width of at least one magneto resistive element.

15. (Original) The apparatus of claim 13 wherein the first shutter has a width larger than the width of one magneto resistive element and less than the width of two magneto resistive elements.

16. (Original) The apparatus of claim 13 wherein the first shutter has a width larger than the width of at least two magneto resistive elements.

17. (Original) The apparatus of claim 13 wherein the electrical resistance is measured during the wafer process of ion milling.

18. (Original) The apparatus of claim 17 wherein the electrical resistance is measured during the wafer process of ion milling and wherein the controller moves at least one of the first shutter and the second shutter over at least one of the magneto resistive elements during the process of ion milling, wherein the shutter has a width to substantially protect the magneto resistive element below the shutter from removal of material when the shutter is placed in a covering position over the magneto resistive element.

19. (Amended) The apparatus of claim 123, wherein a magneto resistive element selected from the plurality of magneto resistive elements includes a stripe having a stripe height, further wherein the property level resistance measured across the magneto resistive element is related to the stripe height.

20. (Amended) An apparatus for use during a semiconductor fabrication process comprising:

a plurality of targets;

a mask having a plurality of shutters positioned adjacent the plurality of targets; and

controller means for monitoring a property level of the plurality of targets, and independently actuating each of the plurality of targets based on each of the plurality

~~of targets property level covering a portion of a target to prevent exposure of the portion of the target from the semiconductor fabrication process while an uncovered portion remains subjected to the semiconductor process.~~

21-29 (Cancelled)

30. An apparatus for use in a wafer process comprising:

a carrier;

an elongated element held by the carrier; and

a mask including at least one shutter and an actuator for moving the at least one shutter, wherein said mask is used to selectively cover a first portion of the elongated element as the wafer process continues to act on a second portion of the elongated element, the wafer process substantially halting with respect to the first portion of the elongated element; and

a controller, wherein said controller is structured to monitor a property level of the elongated element, further wherein the controller is structured to independently actuate each of the first and second shutter based on the property level.

31. The apparatus of claim 30 wherein the mask is a dynamic mask.

32. The apparatus of claim 31 further comprising a controller for the actuator, the controller actuating the at least one shutter between an open position where the at least one shutter is not covering a portion of the elongated element and a covering position where the at least one shutter is covering a portion of the elongated element.

33. The apparatus of claim 31 further comprising:

~~a controller for the actuator, the controller actuating the at least one shutter between an open position where the at least one shutter is not covering a~~

~~portion of the elongated element and a covering position where the at least one shutter is covering a portion of the elongated element; and~~

~~a mechanism for measuring the a property level associated with a selected portion of the elongated element and communicating said property to said controller, wherein the controller actuates the at least one shutter in response to a selected value of a measured property.~~

34. (Original) The apparatus of claim 33, wherein the elongated element is a rowbar containing a plurality of magneto resistive elements.

35. (Amended) The apparatus of claim 34 wherein at least one property level includes two of the magneto resistive elements of the row of a plurality of magneto resistive elements are monitored for electrical resistance, the apparatus further wherein comprising a controller for the actuator, the controller actuating each of the first shutter and the second shutter between an open position where the at least one of the first and second shutter is not covering a portion of the elongated element, and a covering position where the at least one of the first and second shutter is covering a portion of the elongated element, in response to the electrical resistance associated with that portion of the elongated element being at a predefined value.

36. (Original) The apparatus of claim 35, wherein the electrical resistance is measured during the wafer process of ion milling.

37. (Original) The apparatus of claim 36, wherein the electrical resistance is measured during the wafer process of ion milling and wherein the controller moves the at least one shutter over the at least one magneto resistive element during the process of ion milling, wherein the at least one shutter has a width to substantially protect the magneto resistive below the at least one shutter from removal of material where the shutter is placed in a covering position of the at least magneto resistive element.

38. (Original) The apparatus of claim 34, wherein at least one magneto resistive element selected from the plurality of magneto resistive elements includes a stripe

having a stripe height, the resistance measured across the at least one magneto resistive element is related to the strip height.

39. (Original) An apparatus for use in a wafer process comprising:
a carrier;
an elongated element held by the carrier;
a mask including at least one shutter and an actuator for moving the at least one shutter, wherein said mask is used to selectively cover a first portion of the elongated element as the wafer process continues to act on a second portion of the elongated element, the wafer process substantially halting with respect to the first portion of the elongated element; and
a controller for the actuator, the controller actuating the at least one shutter between an open position where the at least one shutter is not covering a portion of the elongated element, and a covering position where the at least one shutter is covering the portion of the elongated element, in response to a monitored property level associated with the portion of the elongated element being at a predefined value.

40. (New) The apparatus of claim 39 wherein the mask is a dynamic mask.

41. (New) The apparatus of claim 39, further comprising a mechanism for measuring the property level associated with a selected portion of the elongated element and communicating said property level to said controller.

42. (New) The apparatus of claim 39, wherein the elongated element is a rowbar containing a plurality of magneto resistive elements.

43. (New) The apparatus of claim 39 wherein the property level includes electrical resistance, further wherein the controller actuates each of the first shutter and the second shutter between an open position where at least one of the first and second shutter is not covering a portion of the elongated element, and a covering position

where the at least one of the first and second shutter is covering a portion of the elongated element, in response to the electrical resistance associated with that portion of the elongated element being at a predefined value.

44. (New) The apparatus of claim 43, wherein the electrical resistance is measured during the wafer process of ion milling.

45. (New) The apparatus of claim 44, wherein the controller moves the at least one shutter over the at least one magneto resistive element during the process of ion milling, wherein the at least one shutter has a width to substantially protect the magneto resistive element below the at least one shutter from removal of material where the shutter is placed in a covering position of the at least magneto resistive element.

46. (New) The apparatus of claim 34, wherein at least one magneto resistive element selected from the plurality of magneto resistive elements includes a stripe having a stripe height, the resistance measured across the at least one magneto resistive element is related to the strip height.